(19) World Intellectual Property **Organization**

International Bureau



(43) International Publication Date 31 March 2005 (31.03.2005)

(10) International Publication Number WO 2005/028675 A2

(51) International Patent Classification⁷:

C12Q 1/68

(21) International Application Number:

PCT/JP2004/013722

(22) International Filing Date:

14 September 2004 (14.09.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/505,632

24 September 2003 (24.09.2003)

(71) Applicants (for all designated States except US): ONCOTHERAPY SCIENCE, INC. [JP/JP]; 3-16-13, Shirokanedai, Minato-ku, Tokyo 1080071 (JP). THE UNI-VERSITY OF TOKYO [JP/JP]; 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo 1138654 (JP).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): NAKAMURA, Yusuke [JP/JP]; 17-33, Azamino 1-chome, Aoba-ku, Yokohama-shi, Kanagawa 2250011 (JP). FURUKAWA, Yolchi [JP/JP]; 10-40, Miyazaki 3-chome, Miyamae-ku, Kawasaki-shi, Kanagawa 2160033 (JP).
- (74) Agents: SHIMIZU, Hatsushi et al.; Kantetsu Tsukuba Bldg. 6F, 1-1-1, Oroshi-machi, Tsuchiura-shi, Ibaraki 3000847 (JP).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,

PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM. TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

Published:

without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR DIAGNOSING HEPATOCELLULAR CARCINOMAS

(57) Abstract: Objective methods for detecting, diagnosing, treating and preventing hepatocellular carcinoma (HCC) are described herein. In particular, the present invention relates to two genes up-regulated in HCC cells as compared to normal cells, referred to herein as MGC47816 and HES6. In one embodiment, the diagnostic method involves the determining the expression level of MGC47816 or HES6 that discriminate between hepatocellular carcinoma cellsand normal cells. The present invention further provides methods of screening for therapeutic agents useful in the treatment of HCC, methods of treating HCC, and methods for vaccinating a subject against HCC.

